

ABSTRACT OF THE DISCLOSURE

The apparatus for communication channel estimation device of the present invention includes: a frequency response square computing circuit, to generate a first frequency response corresponding to a first frequency and
5 a second frequency response corresponding to a second frequency according to a input signal, and to square the first and the second frequency response; and an estimating circuit, to estimate a channel length according to the squares of the first frequency and the second frequency response. Wherein the input signal is transmitted in a symbol rate and the first
10 frequency and the second frequency are $1/M$ and $1/N$ times of the symbol rate respectively, wherein M and N are in the order of 2.